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COSTS AND BENEFITS
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A CRITICAL REVIEW OF THE CBO REPORT,
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THE ACTIVE ARMY.

BY

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SYNOPSIS OF THE CBO REPORT

The Congressional Budget Office study, <u>Quality Soldiers: Costs of Manning the Active Army</u>, dated June 1986, discusses recruiting costs, the measurement of manpower quality, the relationship between quality and performance, and cost-effectiveness of manpower programs. The CBO measures defense manpower cost-effectiveness in terms of difference in percentage increase in productivity and costs. Percentage increase in "productivity" is defined as the same percentage increase in Skill Qualification Test (SQT) scores. Based on these measures and the assumptions that time in service greatly increases productivity and that enlistment bonuses and military pay are the primary and most cost-effective recruiting tools, the CBO concludes that the Army's recruiting programs for improving the quality of its enlisted force are not cost-effective. The CBO proposes three alternative programs at reduced levels of high-quality recruits: (1) holding the line on current expenditures, (2) reducing resources for one year by suspending enlistment bonuses and pay raises for recruits, and (3) suspending bonuses and pay raises for one year and limiting pay raises to three percent for two more years . Based on its methodology and assumptions, the CBO finds these cost-effective.

CRITIQUE

The Need For Quality Manpower

<u>Increase in Job Complexity</u>. The CBO, citing the Army's submission to the Defense Manpower Quality Report (US Department of Defense, 1985), concludes that the Army expects a change of less than 4 percent in the number of positions it describes as "very technical," and that recruits needed for very technical jobs should rise by only about one percentage point. The Army submission does estimate, just from FY 84 to FY 90, a change of 3.72 percent in very technical Military Occupational Specialty (MOS) groups, and an additional 2.38 percent in technical MOS groups. The CBO cites only this short-term change and only for the "very technical" MOS groups, while its analysis is based on a long-term (30 years into the future), steady-state Army.

The CBO also ignores the growth in complexity of jobs that are traditionally not considered very technical. For example, in the late 1960s, when HumRRO conducted the study cited by the CBO report (Vineberg and Taylor, 1970), a supply specialist accomplished record-keeping and requisitioning of supplies mostly with pen and paper; today, much of this work is done with electronic data bases and computers. A few years ago a squad of mechanized infantry moved at the top speed of 19 miles per hour. Today the squad can move at better than 30 miles per hour and is armed with, in addition to or in lieu of earlier weapons, a rapid firing, stabilized 25 mm cannon, TOW missiles, a coaxial 7.62 mm machine gun, the squad automatic weapon, vehicle firing port weapons, and thermal sights. While no one would classify their jobs as technical, the fact is that even today's infantrymen must be capable of coping with complex technology, and the increase in complexity seems to be accelerating rather than slowing.

The issue of increasing complexity of Army jobs was specifically addressed by a major study conducted by the Army Combined Arms Combat Development Activity (Ostovich et al., 1982). The study found:

o A steady upward migration of aptitudinal requirements.
o A steady increase in institutional training requirements on new systems.

o An increase in skill sustainment training requirements in units.

o An increase in the difficulty of training management because of systems' complexity.

o An increase in the difficulty, complexity, and cost of the total maintenance task even though some new systems are easier to operate.

o Soldier quality plays an important role in combat- and cost-effectiveness.

o Improvements are needed: The Army must establish manpower quality goals in terms of mean Armed Forces Qualification Test (AFQT) scores and percentage of Test Score Category (TSC) I and II soldiers, and avoid accepting a substandard level of quality to meet end strengths.

Martin Binkin (1986), in his latest book on the effects of technological growth on defense manpower requirements, has compiled data from published reports and from Department of Defense sources that show a growth in technical jobs from around 12 percent in 1953 to more than 27 percent in 1985, and in electronics-related jobs from 5 to 19 percent in the same time period, a growth of 280 percent.

The manpower portion of the Army 21 study, undertaken to determine the manpower needs for the foreseeable future, found that increased quality soldier demands predominate (Lining, 1985). The study concluded that the future soldier must be able to make rapid, independent decisions and be better educated, with an expert level of technological understanding. Such a multi-capable soldier, besides being a good fighter, must clearly score high on the quality measures used by the Department of Defense - aptitude tests and educational level.

Quality and Effectiveness. In addition to the SQTs and other measures of relationships of soldier characteristics and effectiveness cited by the CBO, there is a large body of relevant literature (Toomepuu, 1981) that provides ample evidence of the effects of aptitude on performance. The Marine Corps based a number of studies on a sample of more than 13,000 Marines who entered the Corps in 1961 and 1962 (Hoiberg and Berry, 1977). Most of these Marines were followed through their peacetime service, and adequate samples were also followed through combat service in both Korea and Vietnam. The studies conducted by HumRRO in Korea, entitled "Fighter I," were undertaken for the specific purpose of identifying the characteristics which differentiate fighters from nonfighters in combat (Egbert et al., 1958). HumRRO found 11 characteristics that distinguish fighters from nonfighters; the first on the list was intelligence. The data from the Middle East Israeli-Arab wars provide the latest, quite valuable information about the impact of soldier capabilities on the effectiveness of weapons, units, and forces. Studies were done by the Army (US Department of the Army, 1974 a, b), the Rand Corporation (Pascal et al., 1979), the Historical Evaluation and Research Organization (Dupuy et al., 1976), and various Israeli researchers.

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All of these studies conclude that a soldier's mental ability plays an important role in combat-effectiveness. Characteristics of the best Israeli soldiers, the winners of the Israeli Medal of Honor, were studied by Gal (1982). The results are summarized in table 1.

Table 1.   Mean test and evaluation scores of 283
Israeli medal winners in the Yom Kippur War

Test/Evaluation	Percentile (of Mil. Pop.)
Primary Psychotechnical Ratio[a]	86
General Quality Score[b]	93
Motivation-to-Service Index[c]	95

a. Intelligence test based on Raven's progressive matrices and an Otis-type verbal test.

b. Consists of IQ, education, literacy, and motivation index.

c. Based on semi-structured interview before enlistment reflecting motivation to serve in the Army and combat units.

SOURCE OF DATA: Gal, Reuven, "Characteristics of Heroism," in S. Breznitz (ed.), Stress in Israel, 1982. Prepared by J. Toomepuu.

The medal-winners represent a very high cross-section of the Israeli soldier population in terms of their general quality. Their mean General Quality Score (GQS), an Israeli Armed Forces selection index consisting of the intelligence quotient and measures of the level of education, linguistic ability, and motivation, fell in the 93rd percentile of the military population. The mean score of the intelligence quotient alone was in the 86th percentile.

The Army Today. An important issue not addressed by the CBO is the urgent need to improve the Army's manpower quality. Because the good news of the substantial increase in the quality of Army recruits in recent years has been widely disseminated, CBO analysts, as well as most other military manpower experts, tend to ignore the evidence indicating that the quality of the Army's total enlisted force is far from adequate. It is important to remember that recruiting represents only half the picture of manpower quality; the proper measure is the total enlisted force, counting not only those who enlist but also those who leave, and then taking stock of the force that remains.

As shown in table 2, the mean AFQT score of the Army enlisted force in FY 85 was, after some of the best recruiting years in the all-recruited period, still below the FY 75 mean, and lagging the Air Force by 9.5 points.

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Table 2. Mean AFQT score of enlisted members

FY	Mean AFQT Score by Svc.			
	USA	USN	USAF	USMC
1975	53.0	61.3	61.1	No Data
1981	44.5	57.4	59.5	49.4
1982	46.8	58.5	59.9	50.1
1983	49.4	59.1	60.5	51.5
1984	51.3	59.6	61.2	52.4
1985*	51.4	59.6	60.9	52.4

* As of 31 Dec. 1984; unrenormed scores,
  except for some E1-E3, which are renormed
  to the 1980 reference population.
SOURCE OF DATA: DMDC. Prepared by J. Toomepuu.

An even more dismal picture emerges if one looks at the mean AFQT score of the enlisted populations of the services by grade, as shown in table 3.

Table 3. Mean AFQT score of enlisted members, FY 85, by rank and service[a]

Rank	Mean AFQT Score			
	USA	USN	USAF	USMC
E-1	52.4	52.3	61.6	52.0
E-2	55.6	54.8	63.6	54.9
E-3	56.6	57.2	63.2	52.7
E-4	49.7	60.4	58.2	49.5
E-5	45.7	61.6	60.7	52.8
E-6	51.4	62.0	58.6	57.3
E-7	54.9	66.1	62.6	59.7
E-8	53.7	67.5	64.8	61.8
E-9	52.9	66.3	66.5	b

a As of 31 Dec.1984; unrenormed scores,
   except for some E1-E3, which are renormed
   to the 1980 reference population.
b. Insufficient data.
SOURCE OF DATA: DMDC. Prepared by J. Toomepuu.

Representativeness

The CBO report (p. 45) asserts that the Army's recruiting program would lead to a service that is not representative of youths in general. The effects of representativeness on the Army's code of values, ethics, and will to fight may, indeed, make a big difference in battle. While the behavior of soldiers in actual fighting is determined to a great extent by their feeling of responsibility and loyalty to their fellow soldiers and immediate leaders (the so-called primary group bonds), the success or failure of most modern armies must also be attributed to the sociopolitical bonds that bind the soldiers to the cause for which they fight. While representativeness may be of legitimate

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concern for these reasons, the CBO's argument that the aptitude and educational levels of soldiers in the peacetime Army should not be higher than that of the youth population is analogous to requiring that our congressional representatives not be any smarter than the general population.

While the Armed Forces during a total mobilization should ideally contain all military service eligible youth, the relatively small peacetime cadre Army, which must provide NCO leadership and hard-to-learn technical skills for the draftees, must be of substantially higher ability.

In any case, as shown in table 4, the Army has a long way to go to reach the quality of the total youth population eligible for service on the basis of the AFQT (those scoring 10 or above). Even recent accessions, although exceeding the percentage of TSC I-IIIA in the service eligible youth population, have a substantially lower percentage of those in TSC I and II (35.1 percent) than the youth population (40.0 percent).

Table 4. Distribution of TSC in service eligible youth population[a] and the Army

TSC	Youth Population	Army EM Population	Army FY 85 Accessions[b]
I	8.9	4.7	4.4
II	31.1	24.9	30.7
IIIA	16.7	18.0	24.3
I-IIIA	55.6	47.6	59.4
IIIB	21.1	30.5	30.8
IV	23.3	21.9	9.8

a. 18-23 years old in 1980; excludes those in TSC V.
b. Recruitment of TSC IV youth is restricted to 20 percent of NPS accessions.
SOURCES: Profile of American Youth, 1982, and DMDC.

Measurement of Cost-Effectiveness of National Defense

The Measure. CBO analysts, taking a cue from the authors of the Army's submission (Vol. 2) to the Defense Manpower Quality Report (op. cit.), measure the cost-effectiveness of manpower programs by comparing the percentage change in "productivity" resulting from the percentage change in cost. A program is deemed cost-effective if the percentage increase in "productivity" is larger than the percentage increase in cost.

The authors of the DOD portion (Vol. 1) of the same report point out that such a definition of cost-effectiveness of military manpower has a serious shortcoming in that it may be inconsistent with normal management objectives in the public sector, where it is important to consider both the direct and indirect benefits gained for additional expenditures. Even when the percentage increase in effectiveness is less than the increase in cost, effectiveness or productivity gained in a specific area may result in other benefits that are well worth the extra cost. In combat particularly, small increments of extra effectiveness may well result in worthwhile benefits, such as lives saved, battles decided, or wars won. Clearly, the objectives for defense should be the achievement of an adequate defense at minimum cost, where "adequate" is necessarily a compromise emerging from political processes as well as government budgeting and resource allocation procedures.

Effectiveness.   The CBO's measure of effectiveness is also questionable. Although SQTs are reasonably good measures of soldiers' performance, it is inappropriate to equate an increase in the SQT score with the same percentage increase in a soldier's "productivity."   SQT score ranges, like the ranges of scores on aptitude tests, depend on the convention used for scaling.   The score should be interpreted in terms of its meaningful correlates, rather than the scale itself.

Passing the SQT is considered a measure of a soldier's ability to adequately perform a job.   The passage rate, therefore, can be viewed as a meaningful interpretation of SQT results.   The index of soldier quality in table 5, based on the relationship of TSC and passage rate on a representative sample of SQTs (Toomepuu, 1985), shows a much greater difference in "productivity" between high- and low-scoring soldiers.

Table 5. Performance-based soldier quality index

TSC	Quality Index	
	HSDG	NG
I	1.00	0.83
II	0.80	0.66
IIIA	0.57	0.47
IIIB	0.38	0.32
IV	0.26	0.22

Although the CBO report shows the effect of TSC on passage rates for both high- and low-skill jobs (p. 28), it discusses the effects for low-skill jobs only.   Ignored in both the discussion and cost-effectiveness analysis is the 400 percent increase in passage rates from TSC IV to TSC I of high school graduate Multichannel Communications Equipment Operators and the more than 500 percent increase for their nongraduate counterparts.   Incidentally, the CBO assumption that a TSC I soldier has an aptitude area score 20 percent above, and a TSC IV soldier 5 percent below, the mean of 100 (p. 28) is not valid.   For FY 85 accessions, for example, the mean aptitude area score for TSC I recruits was 127; for TSC IV soldiers it was 90.6.

The results of the HumRRO study cited by the CBO (op. cit.) are also based on the analysis of four relatively low-skill jobs in the late 1960s, when electronic data processing and record-keeping were far from prevalent in the Army.

The tank gunnery study cited by the CBO (Scribner et al., 1985) provides good data on relationships between AFQT scores and scores on the firing range in a peacetime environment, but the results should not be construed as representative of the relationships between aptitude and combat-effectiveness.   Also, because the data show that TSC IV tank commanders and gunners can do better with an M-1 tank than TSC I commanders and gunners can do with an M-60, the conclusion is frequently drawn that improvements in technology can readily compensate for lack of manpower quality.

Such a conclusion is not warranted.   Besides the fact that results were obtained on a peacetime firing range, relationships between aptitude scores and combat-effectiveness are grossly underestimated when effectiveness is measured

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only at the time of firing, and the probabilities of successfully getting the tank to the point of firing are ignored. The probability of a kill with the M-1 in a battle in Europe is the end product of a long series of probabilities of success, starting with the probability that the tanks are successfully shipped from the United States by the huge, highly complex C5A Air Force cargo planes. Because of the size of the M-1, only two of them can fit into the plane. Some of the other probabilities that must be included in the end product are the availability of spare parts, success of depot maintenance, successful operation of the fuel supply line and the fleet of fuel trucks needed to satisfy the seven-gallons-per-mile thirst of the M-1s, the proper functioning of the seven suitcases full of diagnostic equipment that the mechanic must take into battle, and the probabilities of mechanics properly using this equipment and crews understanding and putting to proper use the 22 volumes of manuals needed to operate the tank.

The differences in the probabilities of success between TSC I and TSC IV soldiers in all these tasks are likely to be of the same magnitude as found on the firing range. The difference in the success between high- and low-ability soldiers at the end of the series of probabilities, when the tank crew is finally taking on an enemy tank, is, therefore, greatly magnified. For example, the product of 9 probabilities of 0.8 is 0.13, whereas the product of 9 probabilities of 0.6 is less than 0.01.

The USAREC "Gideon Criterion" study (Wallace, 1982), based on tank firing results from the 1981 Canadian Army Trophy Competition held at Grafenwoehr, Germany, and a Red-Blue tank battle simulation, found an exchange ratio of 1 to 7.45 in favor of Blue when Blue tank commanders were TSC II soldiers, but only 1 to 1.33 when they were TSC IV.

In the construction of their "productivity" measure, CBO analysts also assume an extraordinarily great effect of time in service on the productivity of soldiers. Although soldiers with longer service and higher rank are placed in jobs of higher responsibility, there is scant evidence that their productivity in whatever jobs they hold is related to their time in service to the extent assumed by the CBO. On the contrary, the tank gunnery study cited by the CBO (op. cit.) found virtually no impact of time in service on performance, and the returns for spending a longer time with the crew were small. The Army Recruiting Command has not found greater productivity of recruiters with longer service, and does not even consider time in service when assigning missions to its recruiters.

Cost Analysis

Elasticities of Resources. Contrary to the results of recent statistical recruiting models, as cited in table 6, the CBO assumes that the elasticity of enlistment bonuses (relative to high-quality recruits) is the same as the elasticity for pay. As shown in table 6, recent recruiting models that include a bonus variable estimate substantially lower elasticity for bonuses than for pay.

Table 6. Elasticities estimated by recent recruiting models

Model	Pay	Bonuses[a]	ACF	Recruiters	National Advertising	Unemployment
Daula-Smith, 84	1.6	0.08	0.48	0.96	0.11	1.15
Brown, 83	1.0	----	----	0.42	0.05	0.60
REWS, Jul 86[b]	2.0	----	0.18	0.63	----	0.85
ARM, 86[c]	0.84	0.06	0.22	0.55	0.05	0.69

a. Based on data from the National Bonus Test, conducted from July 1982 through June 1984 by Rand (Polish et al., 1986), when bonuses were advertised.
b. Economic Research Laboratory, Inc., Recruiting Early Warning System, Recruiting Market Assessment Report, Army, July, 1986.
c. USAREC Army Recruiting Model, 1986.

Marginal Costs. Elasticities by themselves, of course, do not shed any light on the cost-effectiveness of a recruiting resource. When combined with the cost, however, the marginal cost for an additional high-quality recruit can be estimated. Table 7 presents the marginal costs calculated on the basis of the results of the USAREC Army Recruiting Model (ARM).

Table 7. Marginal cost per GMA contract for selected resources

Resource	Marginal Cost*
Pay	$33,008
Bonuses	37,194
Recruiters	7,687
ACF	7,063
Advertising	10,435

* Based on increase in resource equal to cost of 1 percent increase of USAREC budget.

As seen, bonuses are far from cost-effective for getting additional high quality recruits. Moreover, since the termination of the National Bonus Test in 1984, the Army has not advertised bonuses and considers them only as tools for distributing quality into less attractive jobs, and for shifting recruits into longer terms of service. It is possible that word-of-mouth advertising of bonuses by recent recruits still results in some market expansion effects, but these should be lower than the effects observed during the test.

It may also be wrong to view military pay as a recruiting incentive. Most military people, at least, feel that their pay is a well-earned, just reward for their services, and the means of supporting themselves and their families, rather than a recruiting incentive.

Educational assistance, dismissed by the CBO in just one paragraph (p. 18) as being less cost-effective than bonuses, is, according to table 7 and other analyses conducted by USAREC, the most cost-effective means of getting high-quality recruits. USAREC analysis, shown in table 8, finds that the actual cost of the Army College Fund is only about 10 percent of its nominal (advertised) value, when user rates, the estimated amount of eligibility used, and time value of money are included in the analysis.

Table 8. Cost of the Army College Fund, by term of enlistment

Term	Nominal Value*	Projected Actual Cost	Cost/Nominal Value Ratio
2 Yrs.	$ 82M	$ 7.9M	9.7%
3 Yrs.	$178M	$20.3M	11.4%
4 Yrs.	$304M	$29.4M	9.67%

* Based on nominal individual value and number of FY 82 cohort ACF takers.

Besides its cost-effectiveness, educational assistance given by the Army in return for enlistments is every bit as effective a contributor to the nation's human capital as are the billions of dollars in loans and grants disbursed annually by the Department of Education. There would be strong reasons to question national priorities if the young people who serve their country are begrudged the approximately $100 million in educational assistance provided by the Army for an annual cohort, while billions are handed out by the Department of Education without asking anything in return.

Availability of Nongraduates. Although the 3-year cut program proposed by the CBO would result in an increase of the Army's recruitment of TSC I-IIIA nongraduates from the current 5 percent to 16 percent of their population, the CBO apparently assumes that the cost of recruiting these individuals will not increase. The lack of previous experience precludes estimation of a supply function for TSC I-IIIA nongraduates under the CBO program demands, but such a drastic increase in their recruiting, combined with the costs associated with their higher attrition and indiscipline rates, can easily drive their cost higher than the cost of recruiting TSC I-IIIA graduates.

Cost-Effectiveness

The CBO is quite correct in finding that it costs more to recruit high-quality youth. However, its definitions of cost-effectiveness and productivity, when combined with its hard-to-accept assumptions about the effects of time in service on productivity and of expenditures of various resources on the marginal costs of additional high-quality recruits, raise doubts concerning the CBO's conclusions about long-term cost-effectiveness of analyzed manpower programs.

The CBO's cost-effectiveness results are particularly sensitive to its "productivity" index. If we substitute USAREC performance-based soldier quality index, rescaled to make comparison possible, the Army's program calling for 63 percent (69 percent unrenormed) TSC I-IIIA is cost-effective, whereas all the CBO alternatives are not, even when all other CBO assumptions, methods, and costs are accepted.

Table 9 summarizes the CBO results and adds USAREC findings when the USAREC soldier quality index has been substituted for the CBO "productivity" index.

Table 9. Summary of findings with CBO "productivity" and USAREC soldier quality indices

Recruiting Program	CBO Findings[a]						% Prod.Δ Minus % Cost Δ	USAREC Findings		% Prod.Δ Minus % Cost Δ
			"Productivity"		Cost			Soldier quality		
	% HSDG	% I-IIIA	Index	%Δ	$M	%Δ		Index[c]	%Δ	
Army program										
65% (59%) TSC I-IIIA[b]	87.4	63.2 (57.4)	632.0	0	22.9	0	0	632.0	0	0
69% (63%) TSC IIIA	87.6	66.6 (60.5)	633.6	+0.25	22.7	+0.5	-0.25	643.7	+1.9	+1.4
CBO alternatives										
Hold-the-line	79.0	61.7 (56.0)	627.7	-0.85	22.5	-1.5	+0.65	612.5	-3.1	-1.6
One-year cut	74.0[d]	62.1 (56.4)	625.1	-1.1	22.4	-2.2	+1.1	600.8	-4.9	-2.7
Three-year cut	68.0[d]	61.0 (55.4)	621.3	-1.7	22.2	-3.0	+1.3	585.2	-7.4	-4.4

a. Extracted from various parts of the CBO report, some figures are based on interpolation of the CBO data.
b. Percentages for 1980 youth reference population norms shown in parentheses.
c. USAREC performance-based soldier quality index, scaled to match CBO index.
d. Estimated percentage in 1991.

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Effects of Quality on Discipline

Quality and Indiscipline. One important aspect of cost- and combat-effectiveness, the social behavior and discipline of soldiers, is totally ignored by the CBO report. Absence without leave (AWOL), crimes committed by soldiers, and other types of delinquency reduce the effectiveness of the military and impose a great cost burden. The US General Accounting Office estimated the cost of military AWOLs for the 3-year period from July 1974 through July 1977 to be $1.1 billion, using a conservative, far from complete cost model (US General Accounting Office, 1979). The GAO found, as have practically all other studies on AWOL, that "better educated and more intelligent people are, on the whole, better able to adjust to military life and are far less likely to go AWOL." GAO researchers found that AWOL rates for differing quality groups of service members range from a low of 1 percent for Air Force high school graduates in the highest AFQT mental category to a high of 60 percent for Marine Corps non-high school graduates in the lowest mental category.

Figure 1 shows the strong inverse relationship between indicators of indiscipline and the percentage of TSC I-IIIA male graduate (GMA) accessions from FY 80 through FY 85.
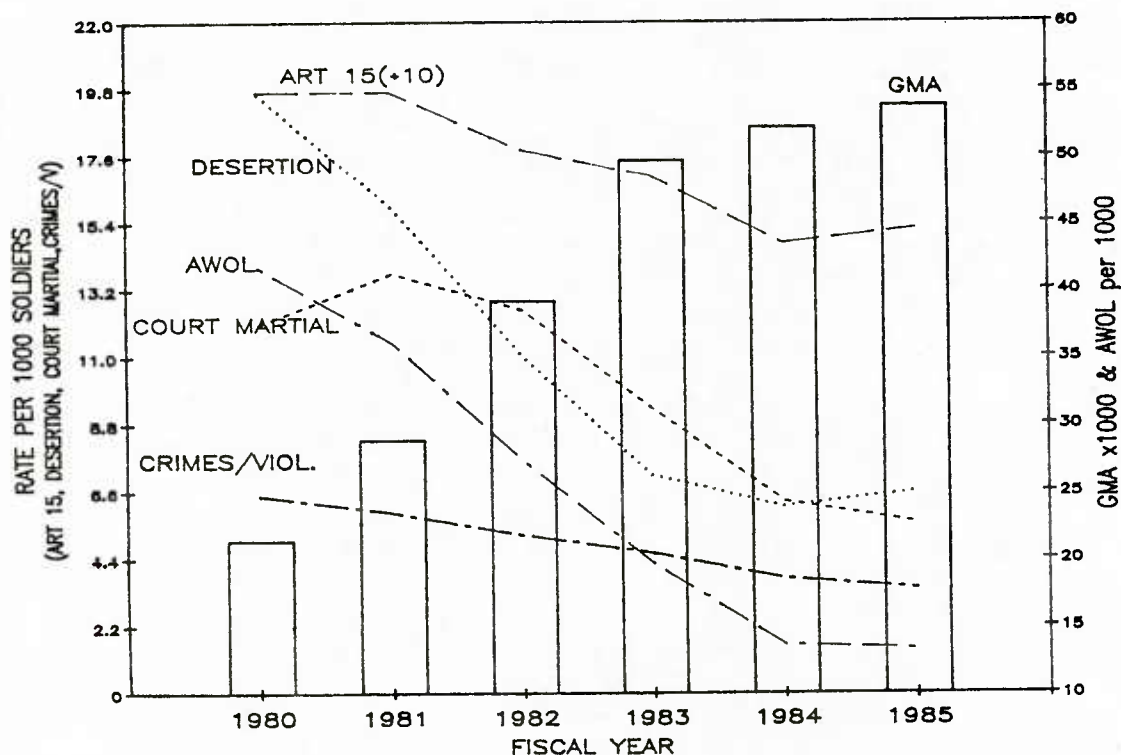

Figure 1. Quality versus indiscipline, FY 80-FY 85
Prepared by Kenneth Martell, HQ USAREC, September 1986.

Table 10 shows the estimated number of indiscipline cases resulting from the Army's 59 percent (65 percent if unrenormed) TSC I-IIIA program and two of the CBO reduced program alternatives. The estimates are based on the assumption that the percentage of nongraduates among first-term enlistees is the dominant factor in indiscipline rates and on elasticity derived from the data in figure 1 (elasticity is defined as ratio of percent change in indiscipline to percent change in nongraduate accessions).

Table 10. Estimated number of indiscipline cases

Indiscipline Indicator	Army's 59% (65% unrenormed) I-IIIA Program	CBO's 1-Year Cut Prog.	CBO's 3-Year Cut Prog.
AWOLs	1,749	3,703	4,461
Desertion	868	1,770	2,120
Courts martial	732	1,505	1,805
Drug use	2,051	4,200	5,034
Property crime	7,365	10,866	12,221
Violent crime	448	791	924

Cost of Indiscipline. Although figures for costs of indiscipline in the Army are not collected, available data allow at least a rough estimate of the cost of AWOL and cost avoidance resulting from return to duty of soldiers successfully treated for drug abuse. Table 11 presents the data.

Table 11. Estimated cost of indiscipline (in millions of dollars)

Indiscipline indicator	Army's 59% (65% unrenormed) I-IIIA Program	CBO's 3-Year Cut Program	Cost Differences per Year
AWOLs[a]	4.0	9.6	5.6
Drug program[b]	65.0	150.0	85.0

a. Based on cost of replacing lost man-years.

b. Based on the cost avoidance resulting from returning to duty successfully treated soldiers.

<u>Other Shortcomings</u>

Besides the deficiencies discussed in detail, the following additional shortcomings of the CBO report should be noted:

o Although the CBO states in its report that unrenormed AFQT (1944 reference population) data are used in its report, the use of these data gives the impression to casual readers that the Army's program for quality increases is overly ambitious and the CBO's alternatives are adequate.

o In its analysis the CBO does not consider the increasing enemy threat and manpower requirements to adequately meet that threat.

o The CBO does not adequately compare Army's program to manpower quality programs of other services and modern armies.

o The CBO does not consider service in the reserves in cost-effectiveness calculations.

o The CBO does not consider higher training costs associated with higher turnover of higher quality recruits in the context of total benefits, such as:

oo Increase in trained manpower supply for reserves (each enlistee incurs an 8-year service obligation).

oo Improved mobilization readiness resulting from increase of militarily trained manpower in population.

oo Improved mobilization readiness resulting from vigorous exercise and readiness of the training base.

oo More veterans in the population likely to become opinion leaders - educators, businessmen, elected officials - and to support the nation's defense.

o The CBO does not adequately consider the following effects of lower man-power quality on combat-readiness and costs.

oo Lower training readiness.

oo Requirement to shift resources from combat support to law enforcement agencies and administration to process indiscipline cases and premature losses.

oo Poorer maintenance resulting in increased equipment downtime, need for more spare parts because of incorrect diagnosing and unneeded replace-ments, and more injury and loss of life from accidents.

o The CBO report does not address the effects of a lower quality enlisted force on Army image and factors related to it. Although difficult to quantify, based on past experience the following adverse effects can be expected:

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oo Loss of public support resulting from adverse publicity on cases of indiscipline and ineffectiveness.

oo Lowering of Army morale.

oo More difficult recruiting.

oo Lower retention rates.

oo Perception by allies and adversaries of weakening of America's defense, leading to loss of deterrence.

CONCLUSIONS

The major issues discussed above can be summarized as follows:

o The CBO's cost-effectiveness and "productivity" measures are inappropriate.

  oo Defense cost-effectiveness objectives should be to achieve adequate defense at minimum cost.

  oo Relationships between soldier quality and effectiveness must be evaluated by meaningful performance-based measures, such as SQT passage rate or estimated effects of man-machine systems in combat.

o Cost savings found by the CBO are illusory. Many hidden or incommensurable costs are not addressed and analysis is based on numerous questionable assumptions about the cost and effectiveness of recruiting and manpower programs.

o The CBO analysis does not consider the total Army concept, e.g., the benefits of Active Army training to Army Reserve.

o A drastic increase in recruitment of TSC I-IIIA nongraduates may not be possible or cost-effective.

o Although the recruitment of quality is costly, quality manpower is cost-effective from a larger perspective.

o Despite recent improvements, the Army's manpower quality is still substantially below the quality needed for a cadre Army that must provide NCO leadership and hard-to-learn technical skills to the mobilization Army.

o The CBO's proposed programs for lowering the quality of recruits would substantially lower the Army's combat- and cost-effectiveness.

o Lower manpower quality is likely to lead to perception of weakening of America's defense and loss of deterrence.

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